



Effect of imagery on free-throw shooting in basketball extracurricular

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Abstract

The purpose of this study was to find out differences in influence between internal imagery training and external training imagery on the results of free-throw shooting in extracurricular bola basketball; It used an experimental method. The sample was selected by random sampling technique which comprised three schools, SMPN 1 Bantul, SMPN 3 Bantul, SMPN 3 Jetis with a total of 42 bola basketball extracurricular students. An instrument measured the shooting free throw test to measure the free throw from Arianto B. The data were then analyzed using a two-track analysis of variance (ANOVA) at a significant level of $\alpha = 0.05$. The results show that there is a significant difference between internal and external imagery training on the results of free-throw extracurricular bola basketball, which is evident from the value $\text{sig} = 0.010 < 0.05$. External exercises imagery provides a better influence on the results of free shooting extracurricular bola basketball.

Keywords: internal imagery, external imagery, shooting free-throw

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INTRODUCTION

Free throw shooting is a shot given to a player to score one number, not guarded, from the back position of the free-throw line, and in a half circle (Perbasi, 2012). Free throw shooting is a free shot obtained by the player if the opposing player violates a violating team, the free throw shooting is done two or three times in one offence, and every point that is generated in one free throw shot is one point. (Wissel, 2011) stated that success in free throw shooting requires self-confidence, routine, relaxation, rhythm, and concentration. From the opinion above, it can be concluded that in addition to technique, psychological free throw shooting is also an important role. Talking about the success of free-throw shots is influenced by psychological factors, in line with statements from (Irianto, 2018) stating that physical factors, techniques, there is also one aspect that plays an active role in the success of sports, namely psychological aspects, especially in aspects of mental readiness or psychological maturity. Septiyanto and Suharjana (2016) states that imagery is an effective technique to improve performance in a variety of sports skills including

basketball free shots, soccer penalty kicks, karate techniques, volleyball service, tennis service, and golf.

When shooting free-throw, there is one psychological aspect that plays an important role, namely imagery. In line with this statement, Cox, (2011) gives an example of an athlete taking free shots in basketball, athletes are asked to imagine themselves going to shoot free shots in basketball, but in an external perspective, the athlete is outside his body and sees him shooting shots free. Cox also said that imagery is very good for observing techniques and forming skills. Post et al. (2010) state that if someone has good imagery skills will affect the results of free-throw shots. Furthermore, he explained that someone who has good imagery in himself managed to do free throw shots better than those who had small imagery. Weinberg and Gould (2014) revealed that imagery is a form of stimulation that can be said to have similarities to experiences in real sensory, for example, to feel, hear and see. These things in imagery happen to the human mind. Kaplan et al. (2010) imagery is a method of relaxation to imagine places and events associated with a pleasant sense of relaxation, and the



delusion allows the client to enter a state or experience of relaxation. Imagery training can mean three things, namely: that which can be seen or visual, can be heard or auditory and can be felt or kinesthetic Poster & Foster in Purnama (2013). Nanda and Dimiyati (2019) revealed that psychological skills, including imagery, are an important factor in supporting athletes success in the basketball game.

Based on the research literature above, it was revealed that imagery is a very important component possessed by basketball players to maximize themselves when doing free throws. However, the authors note that there is still a lack of research that discusses imagery in basketball players during free throws. Therefore the authors assess the need for a renewal of the results of research on the influence of imagery of basketball players in shooting free throws. The subjects in this study were students who joined the ballet extracurricular activity in Bantul district including 3 schools, namely SMPN 3 Jetis, SMPN 1 Bantul and SMPN 3 Bantul with a total of 42 people.

METHOD

Experiments are the method used in this research. This research experiment intended in this study is to use two groups that do get treatment are different in the form of exercise methods combined with aerobic endurance. The influence that will be seen in this research is imagery on the results of free-throw shooting.

Subjects to be examined in this study were male students who participated in basketball extracurricular activities at SMPN 1 Bantul, SMPN 3 Bantul and SMPN 3 Jetis, amounting to 38 people. Imagery is done by giving a video to students while Test free throw shooting uses test shooting free throw from Brace. Trial shooting to the ring is done ten times. Each ball is given a score of one; the test score is the number of balls that are valid into the ring. This test has a validity of 0.71 and a reliability of 0.99 (Aryanto B, 2010). The data collection technique is carried out by giving free-throw tests which are carried out on the initial test (pre-test), and after getting the pre-test results, students will get treatment in the form of internal imagery and external imagery exercises after being treated at the end of the meeting students will be given a final test (post-test). The data analysis technique used for hypothesis testing is the analysis of variance (ANOVA) two paths.

This research was carried out in three schools, including SMPN 1 Bantul, SMPN 3 Bantul, and SMPN 1 Jetis. The number of samples included in the experimental group in this study was 40 students. The pretest data collection was held on Monday, March 11, 2019, for SMPN 3 Jetis, Thursday, March 14, 2019, for SMPN 1 Bantul, Saturday, March 16, 2019, for SMPN 3 Bantul. The process of collecting pretest data was carried out on the basketball court of each school. The posttest data collection was carried out on Wednesday, 27 March 2019 for SMPN 3 Jetis, Tuesday, 2 April 2019 for SMPN 1 Bantul, and on Saturday, 6 April 2019 for SMPN 3 Bantul. The posttest data retrieval process was also carried out on each school's basketball court. Provision of treatment in the form of internal imagery and external imagery methods are given during 6 meetings with a frequency of 3 times a week for each school. Namely: Monday, Wednesday and Friday for SMPN 3 Jetis, Tuesday, Thursday, and Saturday for SMPN 1 Bantul, and Tuesday, Thursday and Saturday for SMPN 3 Bantul. The duration of practice is around 60 minutes for each meeting. The training starts at 15.00-16.30 WIB at SMPN Jetis 3, at SMPN 1 Bantul the training starts at 3:30-17:00 WIB and at SMPN 3 Bantul the training starts at 14.00-15:30. The provision of treatment in the form of training methods is carried out directly by the extracurricular basketball coach of each school. The process of providing treatment is also assisted by assistant coaches and sports teachers from each school.

RESULT AND DISCUSSION

Result

Before doing the calculation, the prerequisite test analysis is the normality test and homogeneity test. Homogeneity test used in this study used the Kolmogorov-Smirnov method with the help of using the SPSS 21 SPSS application program with a significance level of 5% or 0.05. If the significance value > 0.05 ($p > 0.05$), then the data can be said to be normally distributed. Mean-while, homogeneity test is done by calculation using the Levene Statistics method using SPSS 21 program with a significance level of 5% or 0.05. The prerequisite test results for normality and homogeneity analysis can be seen in Table 1.

Based on the results of statistical analysis using Kolmogorov-Smirnov in the SPSS 21 program, it appears that all groups in the pretest and

posttest data from the free throw shooting result have a significance value of $p > 0.05$ which means the data is normally distributed, then the results of the homogeneity test can be seen in Table 2.

Table 1. Normality Test Result

Data	P	Significant	Information
Pretest A1B1	0,184	0,05	Normal
Posttest A1B1	0,312	0,05	Normal
Pretest A2B1	0,539	0,05	Normal
Posttest A2B1	0,587	0,05	Normal
Pretest A1B2	0,900	0,05	Normal
Posttest A1B2	0,452	0,05	Normal
Pretest A2B2	0,709	0,05	Normal
Posttest A2B2	0,403	0,05	Normal

Table 2. Homogeneity Test Results

Test of Homogeneity of Variances					
	Levene Statistic	df1	df2	Sig.	Information
Pretest	0.708	3	36	.553	Homogen
Posttest	0.190	3	36	.902	Homogen

Based on statistical analysis using Levene Statistics in the SPSS 21 program, the pretest results obtained a significance value of $0.553 > 0.05$. Means the pretest data group has homogeneous variants. Likewise, with the posttest results obtained a significance value of $0.902 > 0.05$. It means that the posttest data group also has a homogeneous variant. The results of descriptive statistical analysis in research about imagery of basketball shooting are known that there are differences between the pre and post-test scores obtained. The results of the descriptive imagery statistical calculation of basketball shooting can be seen in Table 3.

The results of descriptive statistical analysis in research about imagery of basketball shooting are known that there are differences between the pre and post-test scores obtained. The results of the descriptive imagery statistical calculation of basketball shooting can be seen in Table 3.

Table 3. Descriptive Statistical Results of Pretest and Posttest Shooting Free Throw

Treatment	Statistic	Pretest	Posttest
Internal Imagery	Amount	21	36
	Mean	2,1	3,6
	SD	0,875	0,699
Eksternal Imagery	Amount	22	27
	Mean	2,2	2,7
	SD	1,032	0,674
Internal Imagery	Amount	29	42
	Mean	2,9	4,2
	SD	0,737	0,788
Eksternal Imagery	Amount	25	34
	Mean	2,5	3,4
	SD	0,849	0,843

After the descriptive statistics were carried out, the ANAVA test was continued to calculate imagery of shooting on the basketball extracurricular, results of this test aim to determine whether there is a difference in effect between the internal imagery and external imagery methods on the results of basketball extracurricular free throw shooting capabilities. As for in drawing conclusions if: (1). If the sig value is greater than or equal to 0.05 ($\text{sig} \geq 0.05$), then H_0 is accepted, and H_a is rejected, meaning that there is no significant difference between the internal imagery and external imagery methods of the basketball extracurricular free throw shooting capability. (2). If the sig value is smaller or equal to the value of 0.05 ($\text{sig} \leq 0.05$), then H_0 is rejected, and H_a is accepted, meaning that there is a significant difference between the internal and external imagery methods of the basketball extracurricular free throw shooting capability. Based on the ANAVA test analysis results above, it can be seen that the value of $\text{sig} = 0.010 \leq 0.05$, then H_0 is rejected and H_a is accepted. So it can be said that there is a difference between the internal imagery and external imagery methods of the basketball extracurricular free throw shooting capability. Thus the first hypothesis states that the external imagery method provides a better influence on the ability to shoot free throw compared to the internal imagery method on basketball extracurricular. The results of the study can be seen from Table 4.

Table 4. Summary of ANOVA Results of Experiment Groups Using the Internal Imagery and External Imagery Method.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Internal & Eksternal Imagery	4,225	1	4,225	7,420.010	

Discussion

Based on the results of the analysis of research data, it is stated that the first hypothesis is known to have a significant difference in effect between the internal imagery and external imagery methods on the basketball extracurricular free throw shooting capability. this can be seen from the result of $\text{sig} = 0.010 < 0.05$ so that this result can be interpreted that the training method given is proven to be able to improve basketball extracurricular free throw shooting capabilities. Based on the analysis results it is known that students who are given the external imagery method have a better influence with an average

score of 38, compared to the internal imagery training method with an average score of 31.5. These results indicate that the external imagery method is better at helping students than the internal imagery method because this method of external imagery exercises can be done by students anywhere and anytime when students have more free time. While internal imagery for a beginner still needs direction from a coach or expert in order to be able to come up with a picture of the movements in his mind. is one way that can be used to assist in doing the exercises. Imagery practice can mean three things, namely: that which can be seen or visual, can be heard or auditory and can be felt or kinesthetic (Purnama, 2013). Komarudin (2017) states that imagery training is very effective to improve athlete performance, even 90-97% of elite athletes use imagery training because the training is very useful to improve their performance. (Dimiyati, 2018) which states for external imagery is the process of imagining someone in which the person acts as an observer of a technique. Shearer et al. (2009) state that external imagery exercises are more effective than internal imagery because external imagery exercises have advantages for beginners, that is, external imagery can be done when players have free time to view videos used or related to the movements being trained.

Huda (2013) states that external imagery is a form of training that involves many senses (multi-sensory) so that it can be more petrified in doing training. External imagery training also helps in providing a more detailed description and stimulus process so that it is more beneficial in doing the exercise (Shearer et al., 2009). This form of external imagery exercise is also the best alternative as a medium of learning in sports when compared to other forms of presentation/ because video has a dynamic nature and allows it to be repeated or slowed down and the sophistication of this video device allows students to observe carefully until at very complex movements (Jose & Joseph, 2018). Cho (2009) states that external imagery has a more significant increase in performance compared to internal imagery. This is because external imagery shows a real experience of performance during imagery.

Students who take part in basketball extra-curricular activities are beginners who have an interest in and want to develop their ability to play basketball. As beginner players, students need training methods that are better in terms of physical and psychological aspects so that students are able to develop abilities optimally.

Based on the analysis results, it is known that students who are trained using internal imagery have lower free throw shooting capability compared to those who are trained using internal imagery. The internal imagery exercise method itself is a training method that is carried out with the help of a script and read by the trainer to students with students in a relaxed and calm state. According to Cooley et al. (2013), mentioning internal imagery is an imagery exercise that uses an imagery experience guide in the form of a script or script, for beginners, the script will be read by the trainer but for athletes the script will be read by itself. The implementation of internal imagery requires high imagination, perception, and coordination (Nurfadhila, 2016).

Based on technical techniques in the field of external imagery is done by reading the script about the training techniques that will be given while students shadow it in his mind. It requires a high concentration of students and a calm atmosphere so that students can bring up the picture of a series of movements more clearly, but it can also be a weakness in internal imagery training, because if students cannot concentrate properly or there is interference from outside, so students can not bring up a good picture of the movement. This is supported by the opinions of (Shearer et al., 2009) the weakness of internal imagery training is the process of drawing objects obtained in the brain from the desired skills will only occur temporarily if not done more frequently. For beginners will get a less clear picture of the movement techniques that will be done if only explained about the techniques in doing a movement because it will be very difficult to visualize a movement that has never been seen (Nurfadhila, 2016).

The exercise of using external imagery shows positive results on student performance because in the implementation of this exercise is focused on gaining an understanding or understanding of players about shooting free throw exercises that will be done. External imagery exercises increase their attention because of the carefulness in the expression of the wrong or correct motion that can be displayed and can witness the appearance of the movement directly so that the process of the movement seen is easy to remember the sequence of movements to be performed. When doing external imagery exercises that observe themselves performing successfully, and finally the player is easy to apply to the field in practice over and over again. So from the statement above, external imagery has

more advantages than internal imagery. This is reinforced by Harimurti (2018) statement which states that external imagery is more suitable to be applied to improve skills while internal imagery is more suitable to be applied to improve the mental aspects of an individual. This is also in line with the opinion of Yu et al. (2015) which states that external mental imagery training is more beneficial compared to internal mental imagery exercise if it is used to learn new movements in sports. This is because an athlete's external imagery can be assisted through a third party or video as a stimulus to do the movements to be trained. The reason is that external perspectives require one to visualize the movements produced by others around them or the video being shown, where the observer is the audience, and it is useful to practice the response strategies used when competing against opponents. Besides the opinion of Spittle and Morris (2007), external imagery has a significantly greater increase in the performance of open tasks than internal imagery. It seems that external images provide additional visual information that is most effective when responding to changing environmental conditions effectively, planning actions, and regulating motion. Cooley et al. (2013) argue that certain angles or some can further enhance the effects of external imagery, providing visual information that cannot be accessed by them in the use of internal imagery.

Chairullah et al. (2018) explained that the results of the study conducted by him were the results of pretest 26.67 and posttest 68.89, from the results of this study it could be concluded that imagery training could improve basketball shooting abilities in extracurricular students of SMAN 7 Pontianak. Imagery exercise is done with the help of using a script, imagery that is intended in this study is a series of activities to imagine or bring back in mind an object, event or experience a true motion and has been stored in memory. In this research, there is a difference in shooting ability between someone who has good imagery and poor imagery. The use of mental imagery training has a significant effect on students' ability in mastering basic basketball dribble techniques, this can be seen from the average pretest results of 34.66 and the average posttest of 44.32, the difference between the average pretest and posttest average 9.66 so that there is an increase in the ability to lay up by 27.87% in the experimental group. From the t-test results obtained a significance value of 0,000 this value is smaller than alpha ($\alpha = 0.05$) so that the hypothesis can be

accepted because there are differences (Fuad & Sudarso, 2014).

Suwardi (2015) said that the imagery carried out in this study used the research subject method to view the match through recording; the match in question was the LA Campus Basketball League match. Then the research subjects pay attention to how to play, how to defend and attack the players who become his idols, then after the research subjects are asked to apply what is seen, the results state that there are differences in how to play between before and after seeing the match. In other words, a conclusion can be drawn that is watching a video that can be said to be one of the imagery that is anchored to someone's appearance in playing basketball. Furthermore, he explained that imagery training can improve lay-up learning outcomes, this is because imagery training provides a deeper experience not only in physical motion experiences but also in students' cognitive experiences so that students will find it easy to master difficult movements and complex. It's just that students have to be really serious when doing this exercise if they want to get maximum results because in imagery training it requires good concentration in the process if someone has good imagery will be very helpful for their ability to do lay-ups and vice versa if a person doesn't have Good imagery will produce bad lay-ups too.

Ramadan and Ningrum (2019) explained that there is an influence of imagery on the learning outcomes of shoot lay-up. He further revealed that in imagery exercises, each student is able to imagine a series of movements that will be performed so as to make the individual have confidence in carrying out his or her motion activities. Imagery is one of the mental skills to imagine an event and then apply it in motion or interpret it clearly. In line with this statement, Komarudin (2017) explained that imagery training is one part of mental skills training that can help athletes in increasing self-confidence and increasing concentration in physical activity. It is also seen in this study that imagery has a positive contribution to improving the learning outcomes of shoot lay-up. Akbar et al. (2019) explained that when athletes were given treatment in the form of imagery exercises both the right and left lay-ups had increased, compared to groups not given imagery treatment, was in accordance with what was said by several experts including. Furthermore, he explained that imagery is one of the mental techniques that uses the athlete's imagination in visualizing or imagining a particular sporting

event in his mind. Arif and Priambodo (2013) explained that the dribble ability of a person is very influential with the imagery they have, this can be proven by the results of the research they got, namely the average pre-test results 34.30 and the average post-test 21, 28 the difference in the average pre-test and post-test average of 13.02 so that there is an increase in the ability of dribble by 37.97% in the experimental group. From the t-test results obtained a significance value of 0.990; this value is greater than alpha ($\alpha = 0.05$). These results reveal that imagery which is part of mental training is very good in the ability of a person to dribble in a basketball game.

CONCLUSION

The conclusion that can be drawn from the results of the research and discussion that has been revealed is the influence of imagery on the results of basketball extracurricular free throw shooting capabilities. This means that there is an influence of the ability of imagery possessed in the success of making free throw shots

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